Amazon Cooperation Treaty Organization - ACTO
Amazon Regional Observatory - ARO

November 2026
Reference: October 2026

HEAT AND RAINFALL DEFICITS PERSIST IN THE AMAZON, WHILE HEAT SPOTS INCREASE BY 82%



Taramã Açu- Manaus/AM, Brazil. Photo: Maycon Castro.

Environmental monitoring of the Amazon Basin in October 2026 reveals the persistence of warmer and drier-than-expected conditions for the period, accompanied by a sharp increase in heat spots. Although rainfall volumes increased in parts of the central and southern region compared with previous months, approximately 73% of the basin recorded a precipitation deficit. The average temperature reached 26.52 °C, 1.32 °C above the historical average, marking the fourth consecutive month with temperatures above those expected for the period.

This scenario coincides with the rise in heat spots, which reached 23,998 in October, an increase of 82.6% compared with the same month in 2025. Between January and October, 72,864 heat spots were recorded, 35.6% above the total for the same period of the previous year. Burned-area data, available through August, also indicate growth, with 13,430 km² affected by fire in the first eight months of 2026, an increase of 12.7% compared with the same period in 2025. These results reinforce the importance of integrated monitoring of climate conditions and fire occurrence in the Amazon.

From a health perspective, October brought wildfire smoke into the daily life of Amazonian cities, compromising air quality in Manaus and Porto Velho, both in Brazil, and prompting health alerts, the suspension of classes, and the cancellation of in-person activities.

These conditions are also cause for concern in the coming months. In a bulletin released on October 29, the 2022–2027 El Niño Panel, prepared by seven Brazilian federal institutions, warned of the possible intensification of the phenomenon and a higher likelihood of below-average rainfall and high temperatures across much of Brazil's Northern Region between November 2026 and January 2027. The Geological Service of Brazil (SGB) also identified levels near historical lows in the Branco River, in Roraima, although the main Amazonian rivers generally remain within the expected range for the period. These outlooks reinforce the need for continuous monitoring of climate and hydrological conditions, especially given the risk of worsening drought and forest fires.

CREDITS

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ARO AMAZON REGIONAL OBSERVATORY

Online bulletin

OCTOBER BRINGS INCREASED RAINFALL, BUT DROUGHT STILL PREVAILS IN THE AMAZON

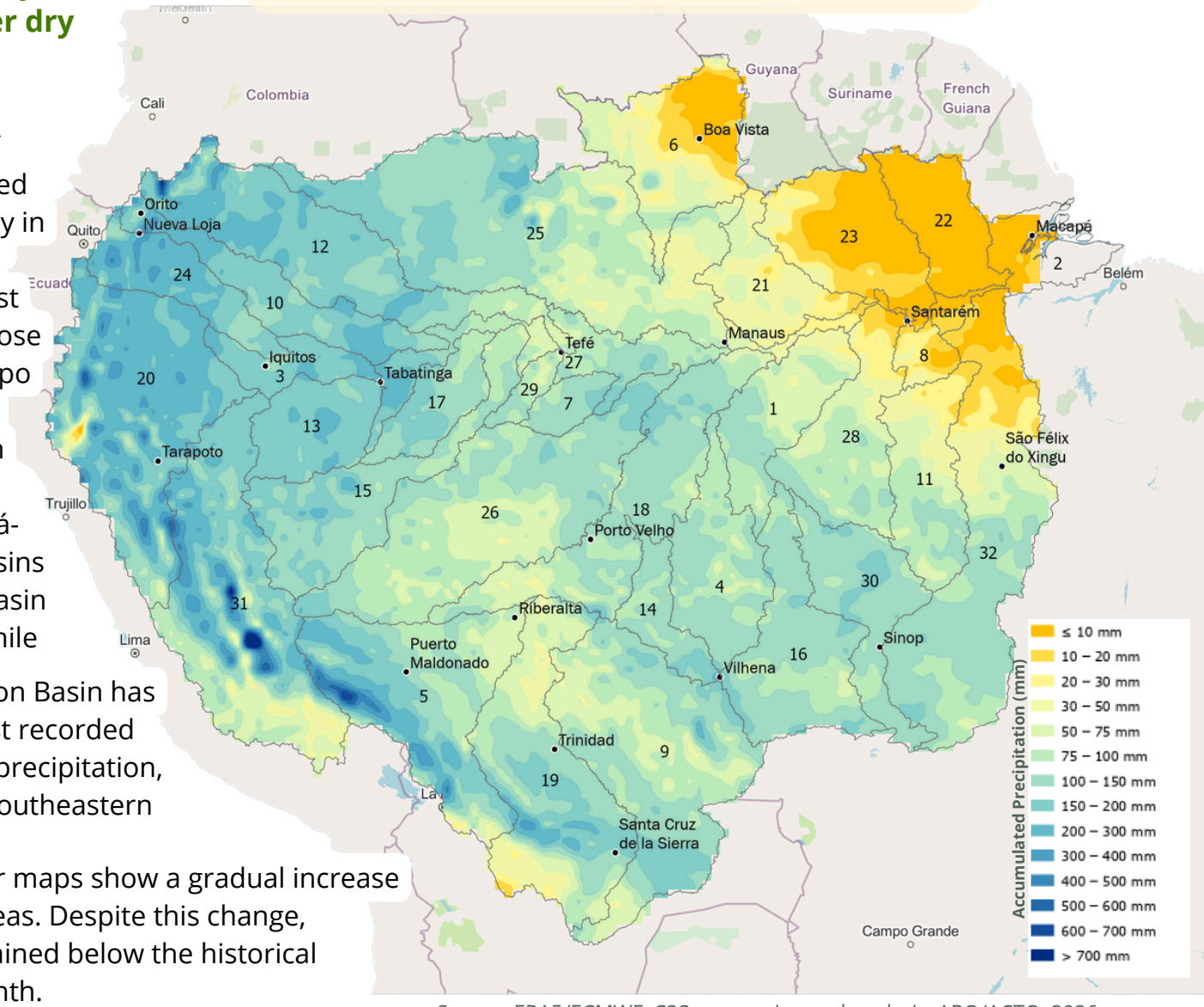
Despite the increase in accumulated rainfall in parts of the basin, approximately 73% of the analyzed area remained under dry conditions

In October 2026, approximately 46% of the Amazon Basin recorded accumulated rainfall between 75 and 150 mm, mainly in the central and southern regions. The western Amazon maintained the highest precipitation volumes, with averages close to 218 mm in the Marañón (20) and Napo (24) river sub-basins. In contrast, the lowest accumulated rainfall occurred in the north and northeast, especially in areas of the Branco (6), Paru (22), Curuá-Una (8), and Amazonas (2) river sub-basins in Brazil. Approximately 15.8% of the basin received less than 50 mm of rainfall, while

The distribution of rainfall in the Amazon Basin has changed in recent months. After August recorded extensive areas with low accumulated precipitation, especially in the central, eastern, and southeastern regions

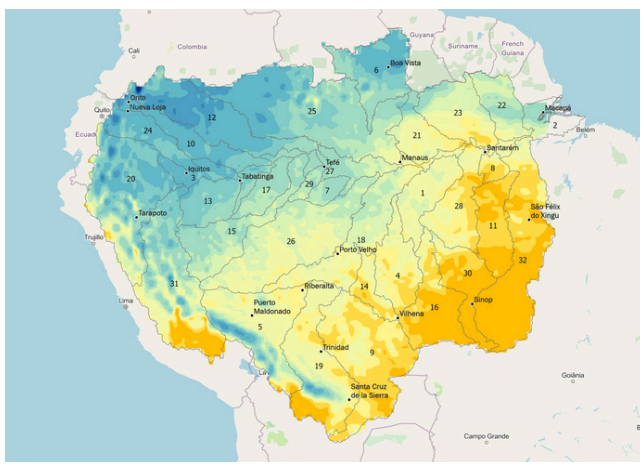
the region, the September and October maps show a gradual increase in rainfall volumes in some of these areas. Despite this change, average precipitation in the basin remained below the historical average for the fourth consecutive month.

PRECIPITATION DISTRIBUTION MAP - OCTOBER

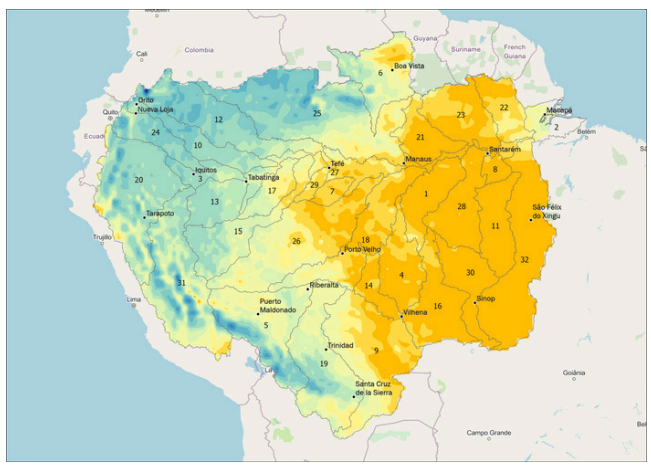


Source: ERA5/ECMWF–C3S; processing and analysis: ARO/ACTO, 2026.

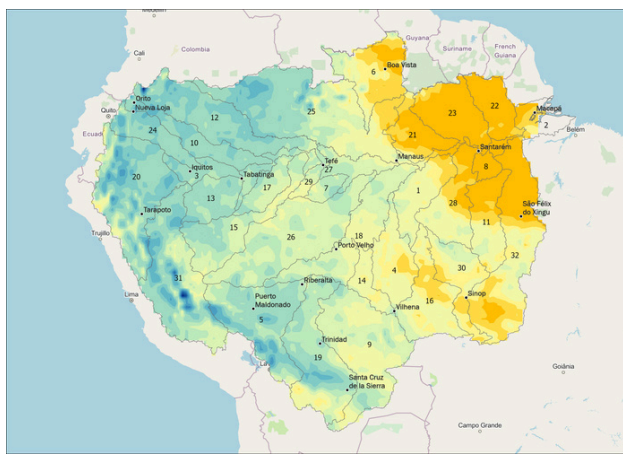
JULY



AUGUST

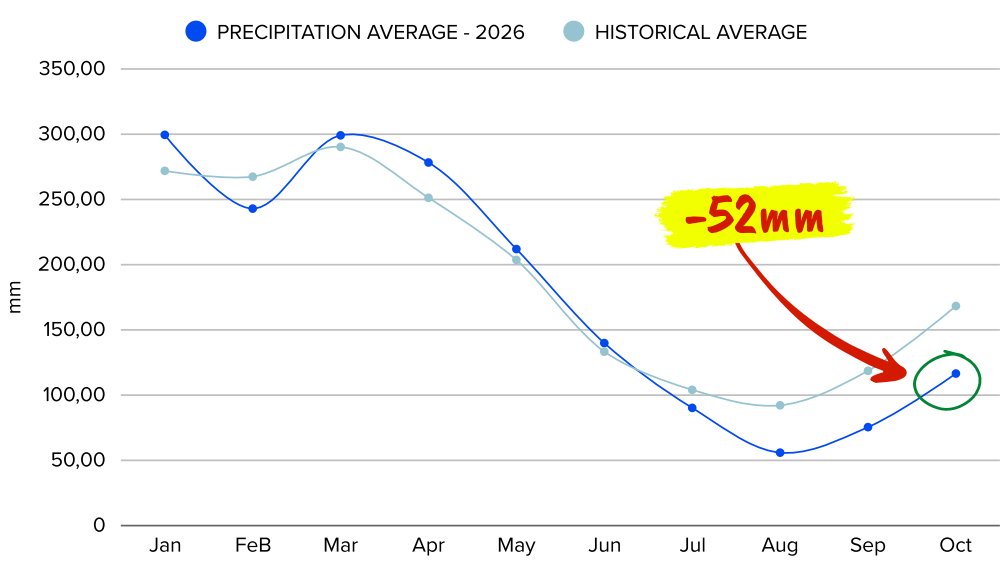


SEPTEMBER



Source: ERA5/ECMWF–C3S; processing and analysis: ARO/ACTO, 2026.

AVERAGE MONTHLY PRECIPITATION IN THE AMAZON BASIN



Source: ERA5/ECMWF–C3S; processing and analysis: ARO/ACTO, 2026.

Despite the increase in accumulated rainfall in certain regions, average October precipitation in the Amazon Basin was approximately 116 mm, about 52 mm below the historical average for the month. Since July, monthly records have remained below historical averages, indicating persistent below-normal precipitation conditions, even with the spatial redistribution of rainfall.

DRY CONDITIONS AFFECT 73% OF THE AMAZON IN OCTOBER

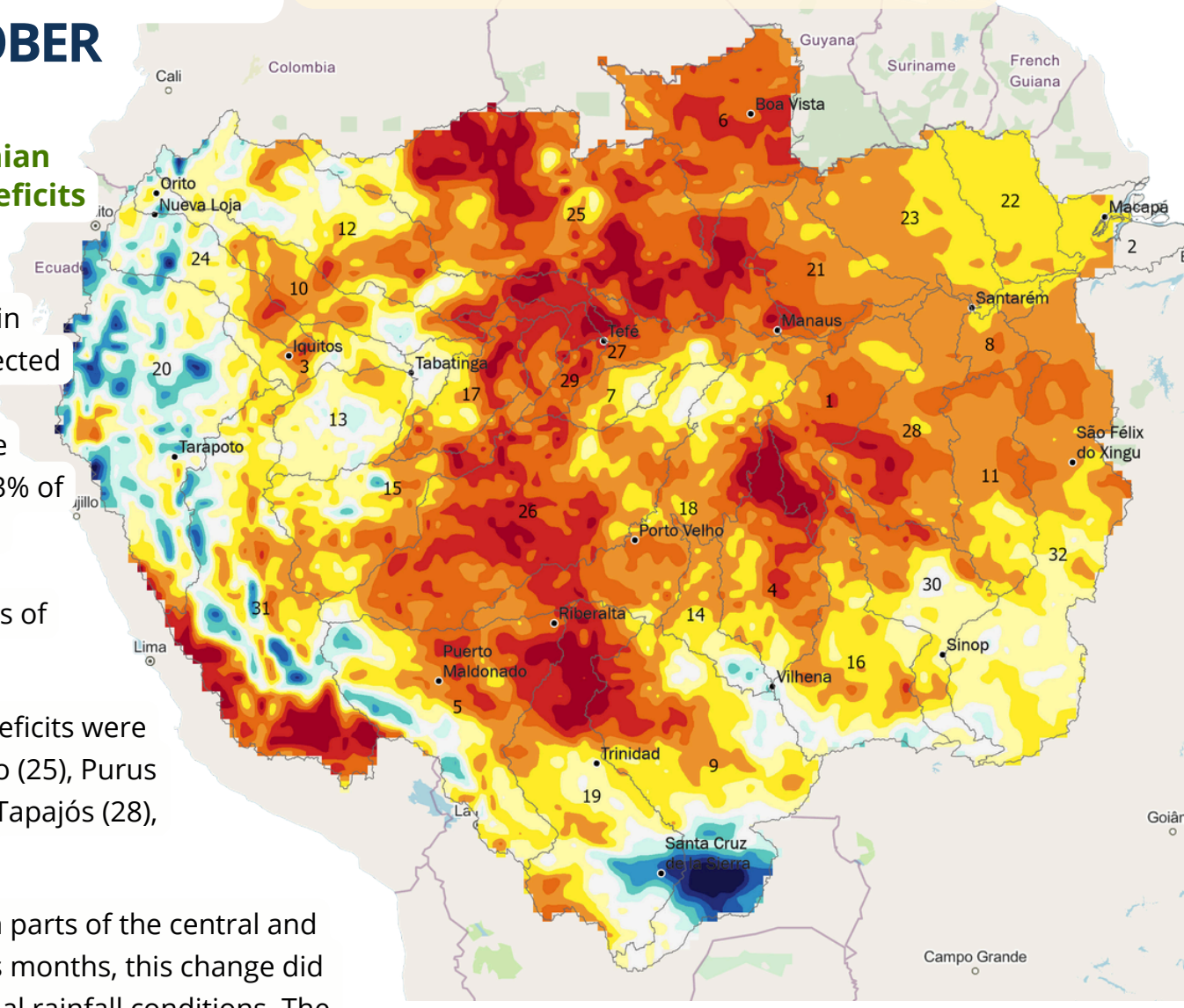
Negative precipitation anomalies predominate in 29 of the 32 Amazonian sub-basins, with the most intense deficits in the northern and central regions

In October 2026, much of the Amazon Basin continued to receive less rainfall than expected for the period. Approximately 73% of the region recorded rainfall volumes below the historical average, and in approximately 53% of the basin this reduction was more intense, indicating that the precipitation deficit remained significant across extensive areas of the Amazon.

The most intense and spatially extensive deficits were observed in the Tefé (29), Branco (6), Negro (25), Purus (26), Abacaxis (1), Solimões (27), Jutaí (17), Tapajós (28), and Uatumã–Nhamundá (21) sub-basins.

Although accumulated rainfall increased in parts of the central and southern Amazon compared with previous months, this change did not necessarily represent a return to normal rainfall conditions. The persistence of precipitation deficits deserves attention because of its potential effects on river levels, ecosystems, and Amazonian populations, in addition to contributing, together with other factors, to increased wildfire risk.

PRECIPITATION ANOMALIES MAP - OCTOBER



Source: ERA5/ECMWF–C3S; processing and analysis: ARO/ACTO, 2026.

PRECIPITATION ANOMALY

-3.0 -2.5 -2.0 -1.5 -1.0 -0.5 0.0 0.5 1.0 1.5 2.0 2.5 3.0

less rainfall ← normal → more rainfall

32	29	3	0
Total sub-basins	Sub-basins under dry conditions	Sub-basins with rainfall within the normal range	Sub-basins above normal

KEY MESSAGES

Precipitation deficit affects 73% of the Amazon. In October, 29 of the 32 sub-basins had dry conditions across more than half of their extent. The most intense anomalies were concentrated in the northern and central regions.

Dry conditions persist despite increased rainfall. The increase in accumulated rainfall in parts of the southern and central Amazon was not enough to reverse the below-historical-average precipitation conditions across much of the basin.

Persistent deficits increase environmental risks. Continued dry conditions may hinder the recovery of river levels and, combined with heat and other factors, increase wildfire risk and its impacts on Amazonian populations.

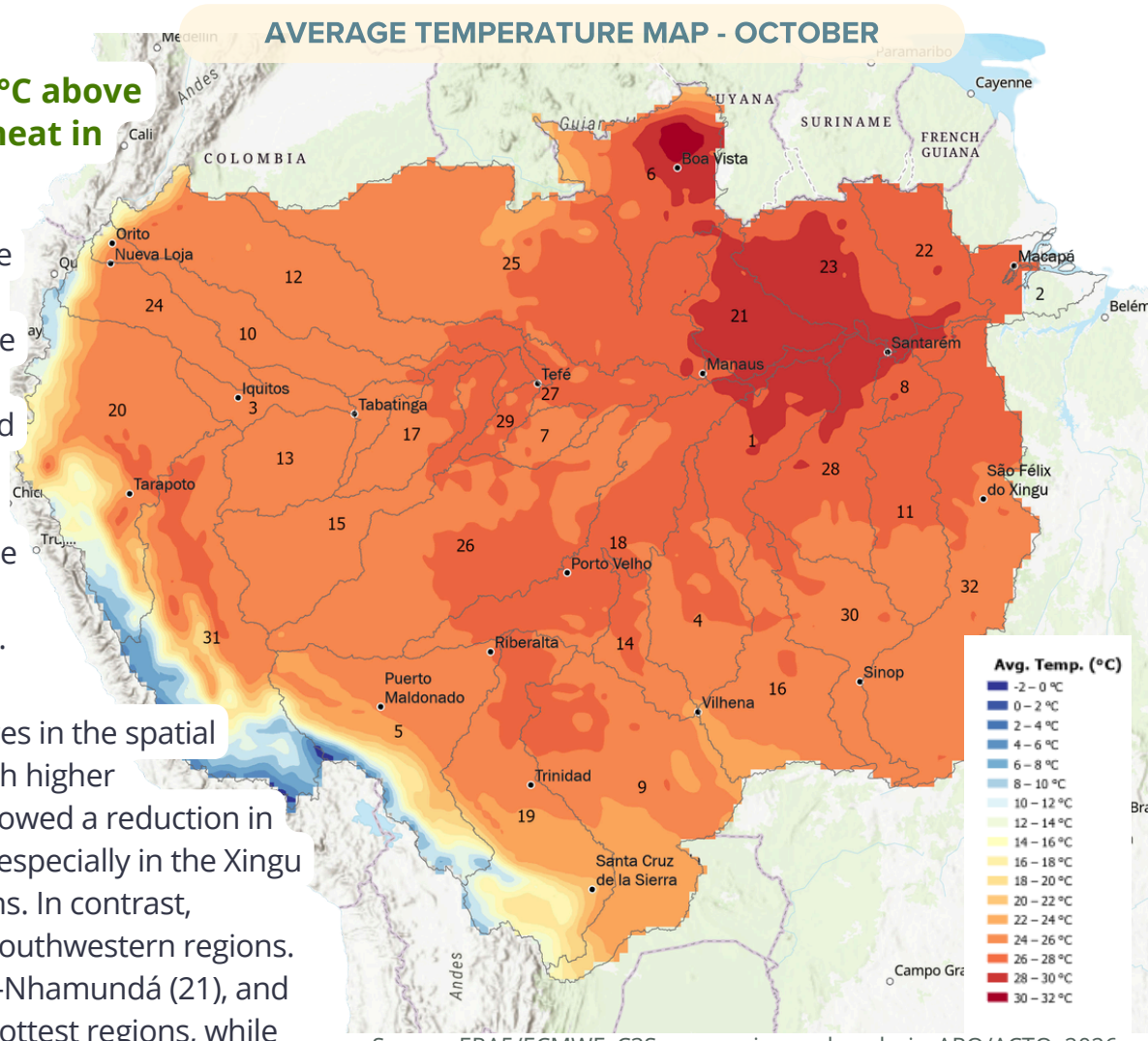
WHAT REQUIRES ATTENTION?

The persistence of negative precipitation anomalies occurs in a context of an intensifying El Niño, a climate phenomenon that may reduce rainfall in parts of the Amazon. According to the 2026–2027 El Niño Panel, prepared by seven Brazilian federal institutions, including INMET, INPE, ANA, and Cemaden, forecasts for November 2026 to January 2027 indicate a higher likelihood of below-average rainfall and above-normal temperatures across much of Brazil's Northern Region. The situation requires special attention in the Branco and Negro river basins, where rainfall deficits are already significant. The continuation of these conditions may hinder the recovery of river levels and increase wildfire risk, with potential impacts on ecosystems and Amazonian populations.

TEMPERATURE IN THE AMAZON REMAINS ABOVE THE HISTORICAL AVERAGE FOR THE FOURTH CONSECUTIVE MONTH

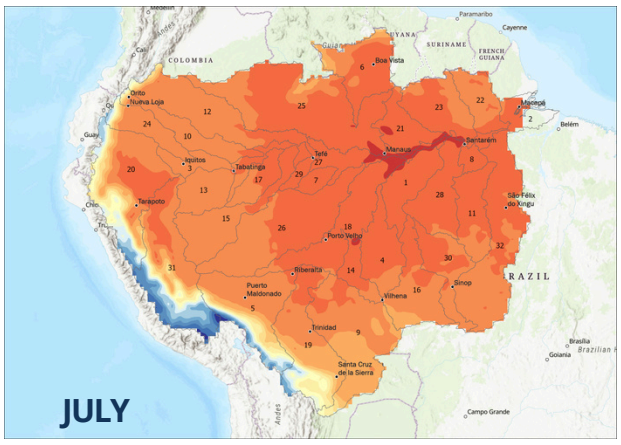
In October, the average temperature of the Amazon Basin reached 26.52 °C, about 1.32 °C above normal, with the highest concentration of heat in the north and central-east.

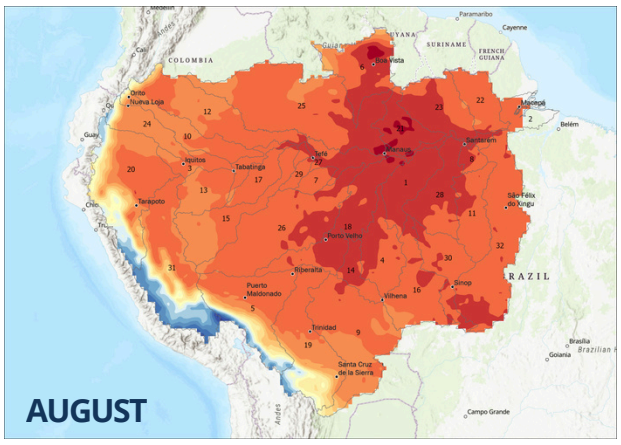
The Amazon Basin recorded an average temperature of 26.52 °C in October 2026, approximately 1.32 °C above the historical average for the month. It was the fourth consecutive month with temperatures above climatological values, maintaining the trend observed since July. The highest temperatures were concentrated mainly in the northern and central-eastern regions of the basin, especially in areas of the Brazilian states of Roraima, Amazonas, and Pará, where monthly averages ranged from 30 °C to 32 °C.

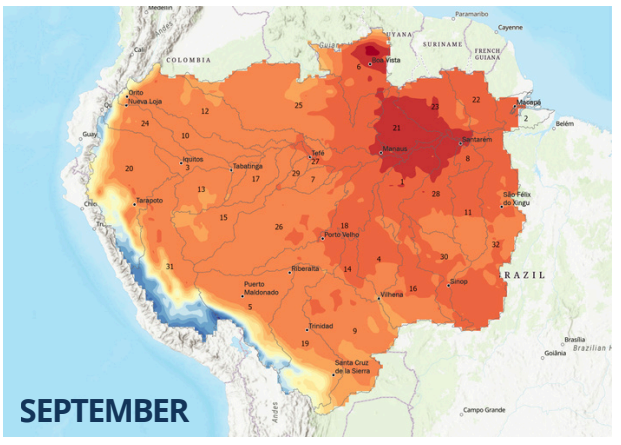


Source: ERA5/ECMWF–C3S; processing and analysis: ARO/ACTO, 2026.

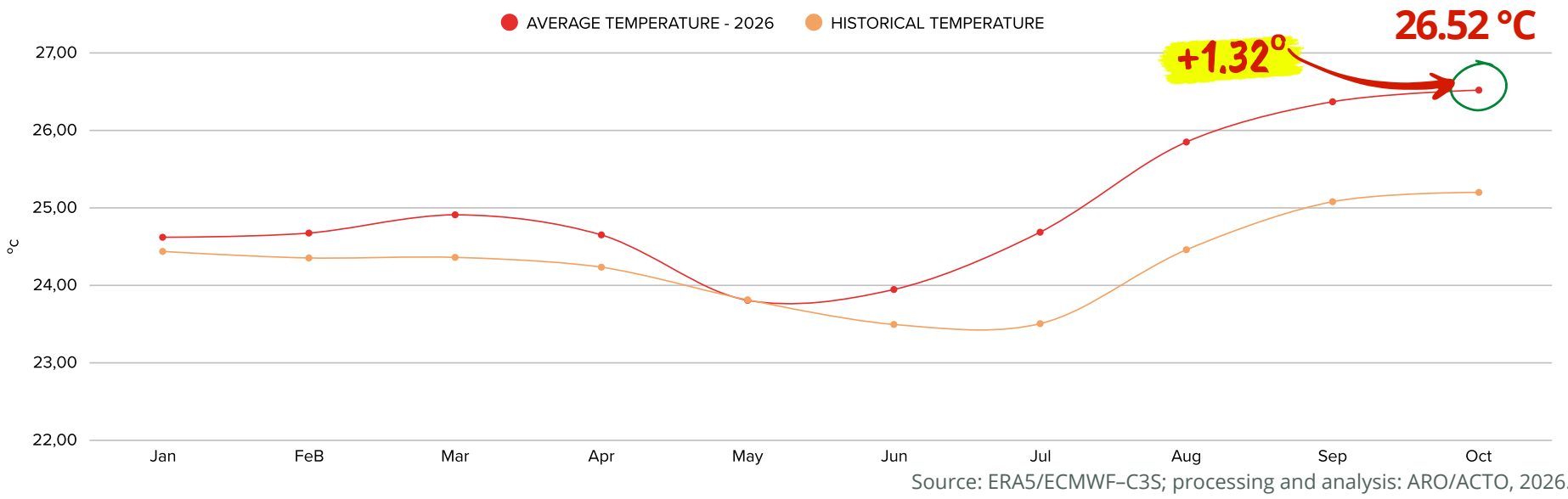
The comparison with previous months shows changes in the spatial distribution of heat. After the expansion of areas with higher temperatures in August and September, October showed a reduction in these areas in sectors of the southeastern Amazon, especially in the Xingu (32), Teles Pires (30), and Juruena (16) river sub-basins. In contrast, temperatures increased in parts of the central and southwestern regions. The Branco (6), Negro (25), Trombetas (23), Uatumã–Nhamundá (21), and Tapajós (28) river sub-basins remained among the hottest regions, while the lowest temperatures continued to be concentrated in higher-altitude areas near the Andes.







AVERAGE MONTHLY TEMPERATURE IN THE AMAZON BASIN



Source: ERA5/ECMWF–C3S; processing and analysis: ARO/ACTO, 2026.

The persistence of temperatures above the historical average, combined with precipitation deficits observed across much of the Amazon, deserves attention because of its potential impacts on water resources and ecosystems. The combination of high heat and below-normal rainfall may intensify the loss of moisture from soil and vegetation, as well as favor conditions conducive to the occurrence and spread of wildfires.

HEAT SPOTS INCREASE 82% IN OCTOBER IN THE AMAZON

October recorded 23,998 heat spots, an increase of 82.6% compared with October 2025. Forest formations account for most of the year-to-date records

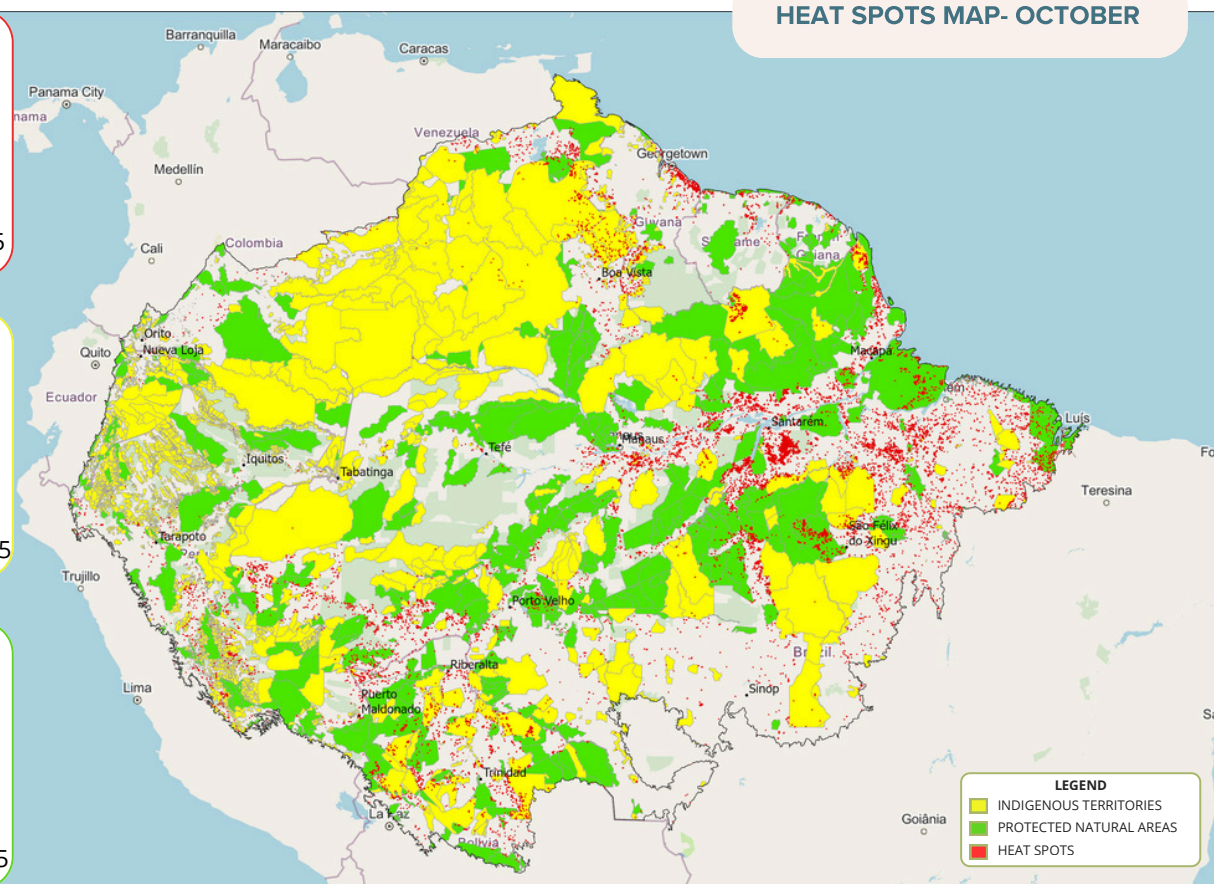
The number of heat spots in the Amazon continued to increase in October 2026, reaching 23,998 records, 82.6% above the same month in 2025, when 13,141 heat spots were identified. Occurrences were concentrated mainly in the central-eastern, southwestern, and southeastern regions of the basin. The increase occurred amid persistent dry conditions and above-historical-average temperatures across much of the region, factors that may favor the occurrence and spread of fires.

AMAZON
23,998
heat spots in October
82,6%
compared with October 2025

INDIGENOUS TERRITORIES
2.474
heat spots in October
12%
compared with October 2025

PROTECTED NATURAL AREAS
3.410
heat spots in October
62%
compared with October 2025

HEAT SPOTS MAP- OCTOBER



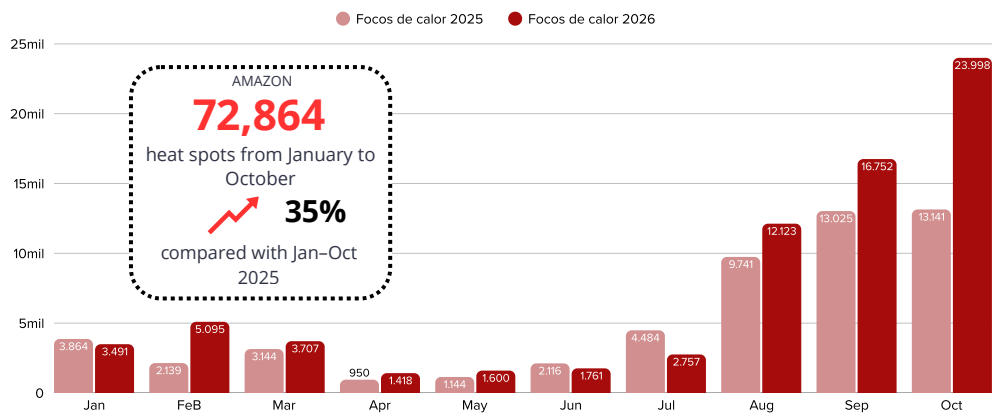
Source: Aqua-T/NASA/INPE; processing and analysis: ARO/ACTO, 2026.

YEAR-TO-DATE TOTAL

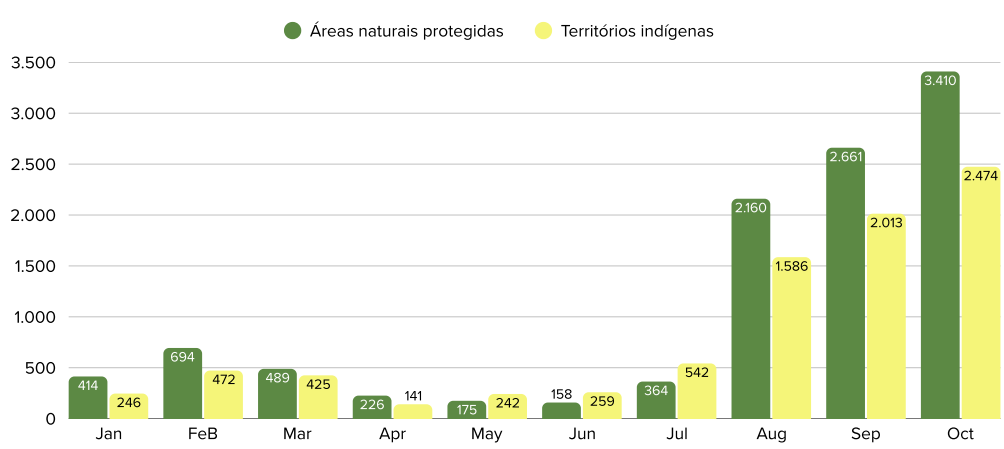
Between January and October 2026, the Amazon accumulated 72,864 heat spots, an increase of 35.6% compared with the same period in 2025. Forest formations accounted for most of the records, with 31,450 heat spots (43%), followed by pastures, with 20,267 (27.8%), and grassland formations, with 6,082 (8.3%). The data show the significant share of forested areas in the distribution of heat spots detected throughout the year.

The increase also affected areas of particular importance for biodiversity conservation and Indigenous peoples. In October, 3,410 heat spots were recorded in Protected Natural Areas, approximately 14% of the total, and 2,474 in Indigenous Territories, about 10%. Compared with October 2025, records increased by 62% in Protected Natural Areas and 12% in Indigenous Territories

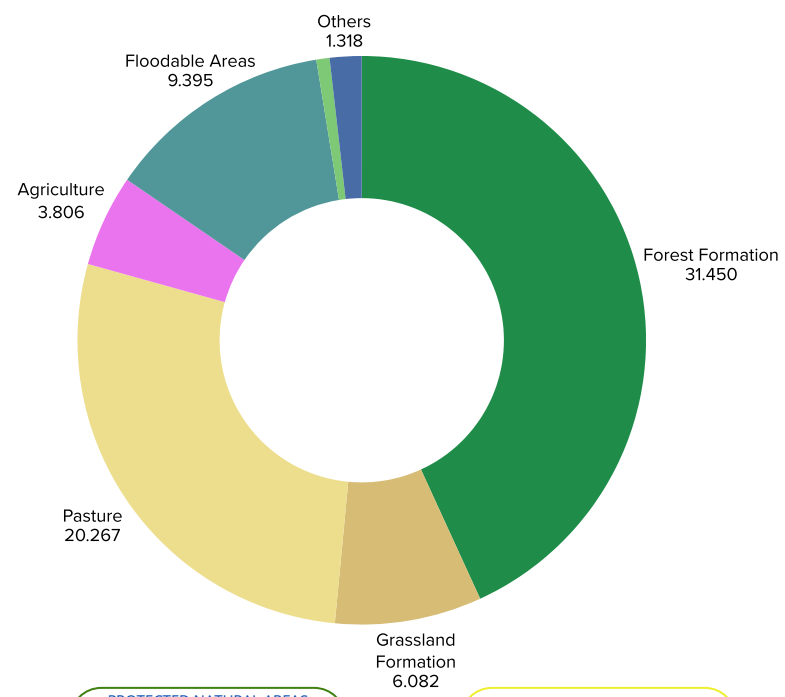
MONTHLY DISTRIBUTION OF HEAT SPOTS - AMAZON



MONTHLY DISTRIBUTION OF HEAT SPOTS BY TERRITORY



DISTRIBUTION OF HEAT SPOTS BY LAND COVER
JANUARY TO OCTOBER - 2026



PROTECTED NATURAL AREAS
10.755
heat spots from January to October
24%
compared with 2025

INDIGENOUS TERRITORIES
8.413
heat spots from January to October
3,5
compared with 2025

BURNED AREA INCREASES IN AUGUST*, AND 2026 TOTAL EXCEEDS 2025

The Amazon recorded 801 km² burned in July and accumulated 7,657 Km² in the first seven months of the year

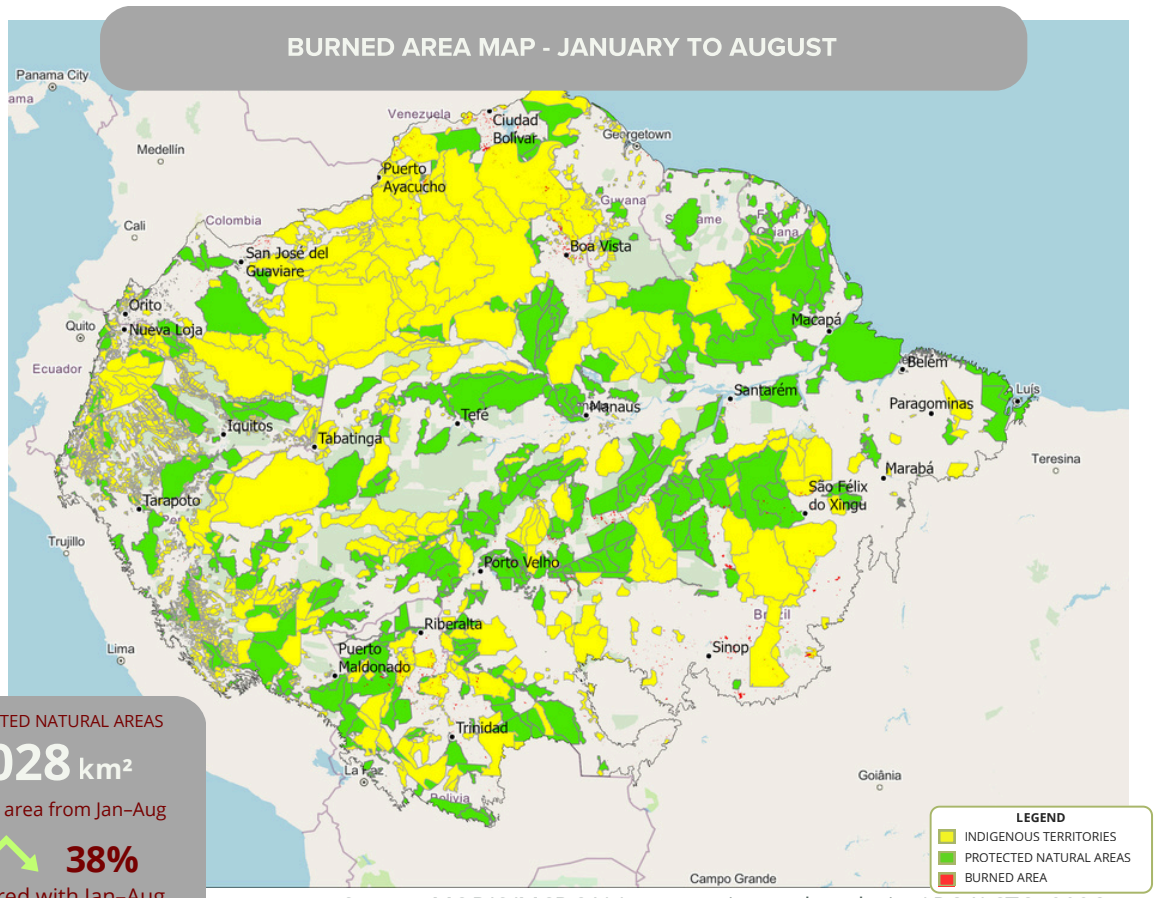
Burned area in the Amazon increased in August 2026, reaching 5,773 km², 13% above the figure recorded in the same month of 2025. The growth followed a year-on-year reduction in July and represented a significant acceleration compared with the previous months of 2026. August accounted for approximately 43% of all burned area recorded between January and August, raising the year-to-date total to 13,430 km², 12.7% above the same period in 2025.

Grassland formations accounted for the largest extent of burned area between January and August, with 3,631 km² (27% of the total), followed by pastures, with 3,548 km² (26%), and forest formations, with 2,796 km² (21%). Together, these three land-cover classes accounted for approximately 74% of the burned area in the Amazon during the period.

AMAZON
5.773 km²
of burned area in AUGUST
13%
compared with August 2025

INDIGENOUS TERRITORIES
877 km²
of burned area in AUGUST
23%
compared with August 2025

PROTECTED NATURAL AREAS
1.071 km²
of burned area in AUGUST
34%
compared with August 2025



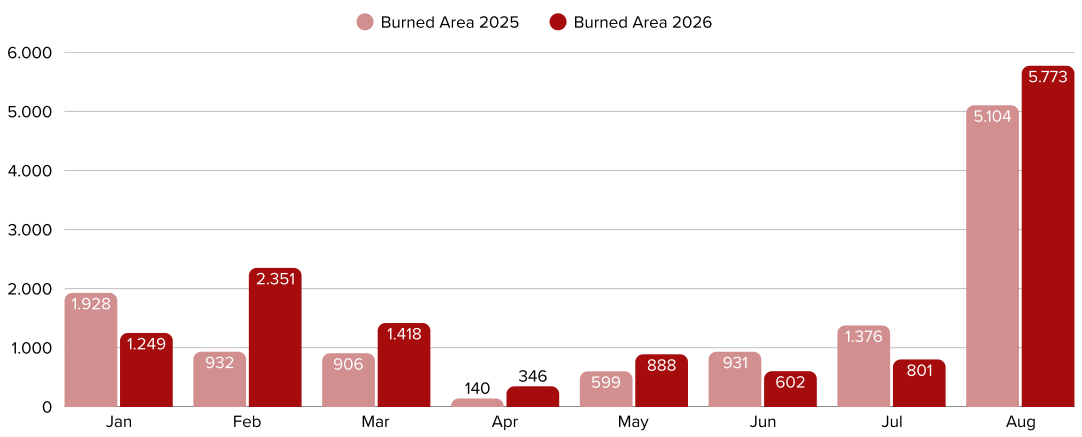
Source: MODIS/MCD64A1; processing and analysis: ARO/ACTO, 2026.

AMAZON
13,430 km²
burned area from Jan–Aug
12,7%
compared with Jan–Aug 2025

INDIGENOUS TERRITORIES
2.002 km²
burned area from Jan–Aug
19,6%
compared with Jan–Aug 2025

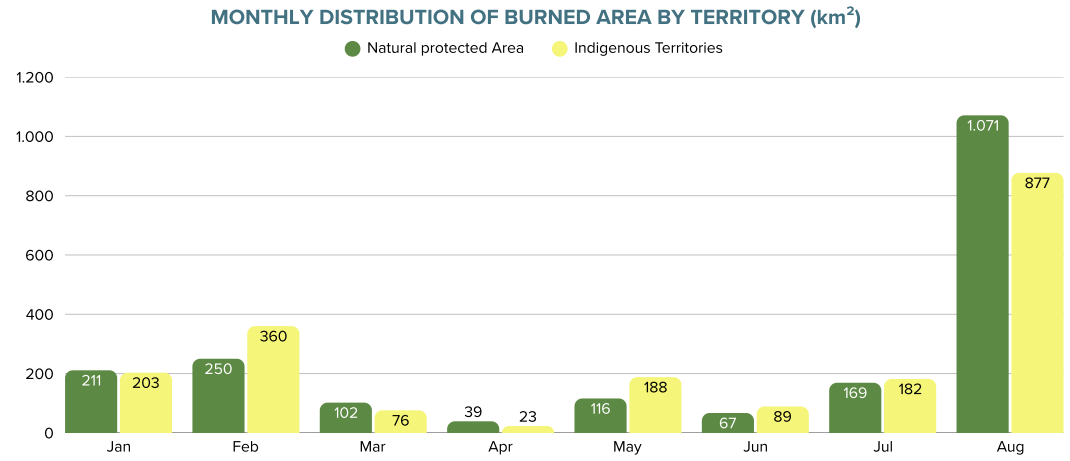
PROTECTED NATURAL AREAS
2.028 km²
burned area from Jan–Aug
38%
compared with Jan–Aug 2025

MONTHLY BURNED AREA IN THE AMAZON (km²)



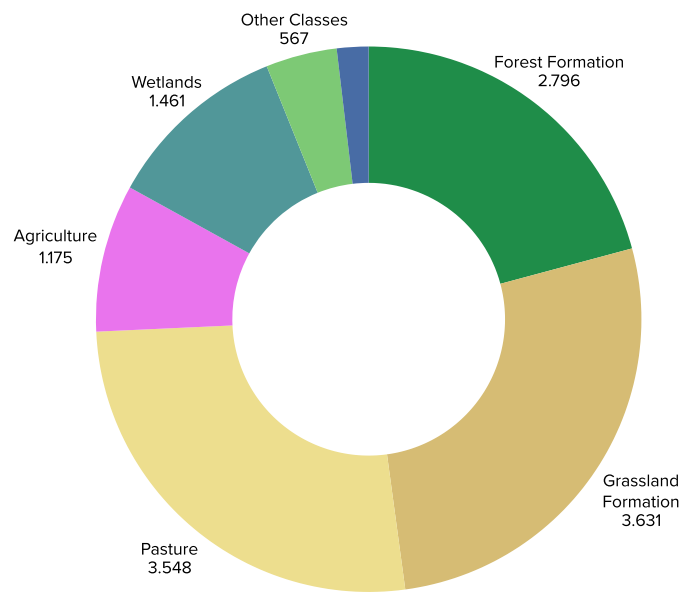
In August, 1,071 km² of burned area were recorded in Protected Natural Areas and 877 km² in Indigenous Territories. Despite these significant figures, both showed declines compared with August 2025, of 34% and 23%, respectively. In the January–August total, burned area also decreased in these territories, with reductions of 38% in Protected Natural Areas and 19.6% in Indigenous Territories, in contrast to the increase observed across the Amazon as a whole.

MONTHLY DISTRIBUTION OF BURNED AREA BY TERRITORY (km²)



Source of charts: MODIS/MCD64A1; processing and analysis: ARO/ACTO, 2026.

DISTRIBUTION OF BURNED AREA IN THE AMAZON BY LAND COVER
JANUARY TO AUGUST 2026 (km²)

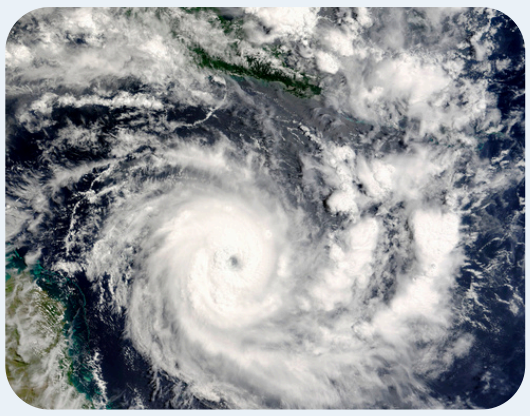


Methodological note

(*) Burned-area data from the MODIS/MCD64A1 sensor are made available approximately three months later than heat-spot data due to the procedures used to process and consolidate the information. Therefore, this ACTO Bulletin issue, referring to October 2026, presents burned-area data through August.

READ ALSO ON THE ACTO WEBSITE

News on monitoring, data consolidation, scientific information, and knowledge for cooperation in the Amazon



Amazonian countries establish meteorological cooperation network

The Amazon Network of Meteorological Service Authorities (RASEM) will strengthen information exchange, weather monitoring, and technical cooperation among the eight ACTO member countries.

link



ACTO highlights progress toward a permanent mechanism for Amazon water management at an international GEF conference

The meeting brought together representatives of governments, international organizations, and GEF-funded projects in Bali, Indonesia, to share experiences and discuss solutions for the sustainable management of transboundary waters.

link


Photo: Mayangdi Inzaulgarat - Prevfogo/Ibama

Amazonian countries advance regional cooperation on integrated fire management

The Third RAMIF Regional Meeting brings together representatives of the eight ACTO Member Countries and international cooperation organizations to assess progress and define work priorities for 2027–2029.

link

SOURCES OF PROCESSED DATA

Precipitation

- Data: ERA5/ECMWF–C3S
- Reference climatology: 1991–2020
- Sub-products: Accumulated precipitation and precipitation anomaly
- Available from: European Space Agency - ESA
- https://cds.climate.copernicus.eu/live

Temperature

- Data: ERA5/ECMWF–C3S
- Reference climatology: 1991–2020
- Sub-products: Monthly mean surface temperature and temperature anomaly.
- Available from: European Space Agency - ESA
- https://cds.climate.copernicus.eu/live

Heat Spots

- Data: MODIS/AQUA-T
- Reference: 2003–present
- Sub-products: Heat-spot statistics for the Amazon region.
- Available from: National Institute for Space Research - INPE
- https://www.inpe.br/queimadas

Burned Area

- Data: MODIS/MCD64A1
- Reference: 2001–May/2026
- Sub-products: Burned-area statistics for the Amazon region.
- Available from: Distributed Active Archive Centers (DAACs) / NASA
- ladsweb.modaps.eosdis.nasa.gov